

REMARKS

In response to the Office Action mailed Aug. 21, 2007, applicants have amended claims 45, 46, 49, 50, 55-57, 60, 64-66, 68, 76-78, 80-84, and 90, canceled claims 47-48, 51-54, 58-59, 62-63, 67, 71-75, 79, 85-89, and added new claims 91-107. Claims 1-44 were canceled in an earlier amendment. Accordingly, claims 45, 46, 49, 50, 55-57, 60, 61, 64-66, 68-70, 76-78, 80-84, and 90-107 are pending, with claims 65-66, 68-70, and 76-78 being withdrawn from consideration.

The Examiner noted that the oath or declaration is defective. Applicants are submitting a new declaration concurrently with this amendment, along with a Application Data Sheet. Applicants believe that the new declaration is in compliance with 37 C.F.R. 1.67(a) and ask the Examiner to confirm this in his next communication.

The Examiner objected to the drawings. Specifically, regarding claim 88, the Examiner stated that “an additional flexible thermal conductor” is not shown in elected Species I (Figure 1).’ Applicants do not concede that Fig. 1 does not satisfy the requirements for drawings as set forth in 37 C.F.R. §§ 1.81-1.88 as to claim 88. Nevertheless, Applicants have canceled claim 88 and request withdrawal of this objection.

The Examiner objected to claim 79. Applicants have canceled claim 79 and request withdrawal of this objection.

The Examiner rejected claim 45 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,805,273 (“Unno”). However, Unno does not disclose, either explicitly or inherently, “a connecting structure that fastens [an] optical element to [a] mount, the connecting structure being configured so that a thermal conductivity of the connecting structure has a symmetry characteristic that substantially does not correspond to the shape of the optical element,” as required by amended claim 45.

The Examiner likens temperature controlling devices 13 and 14 to a connecting structure (Office Action, page 5, citing Unno, Fig. 2). Applicants do not concede that this is appropriate. Nevertheless, Unno does not disclose that temperature controlling devices 13 and 14 fasten an

optical element to a mount as required by claim 45. Accordingly, applicants submit that Unno does not anticipate claim 45 and request withdrawal of the rejection under 35 U.S.C. § 102(e).

The Examiner also rejected claim 46 under 35 U.S.C. § 102(e) as being anticipated by Unno. However, Unno does not disclose, either explicitly or inherently, “a single- or multi-part thermally conducting element which fastens [an] optical element to [a] mount ... the single- or multi-part thermally conducting element [being] configured to provide heat transport that effects an at least partial compensation of [an] asymmetry of temperature distribution in the optical element” as required by amended claim 46.

The Examiner also likens temperature controlling devices 13 and 14 to a single- or multi-part thermally conducting element (*id.*). Applicants do not concede that this is appropriate. Nevertheless, as stated above, Unno does not disclose that temperature controlling devices 13 and 14 fasten an optical element to a mount as required by claim 45. Accordingly, applicants submit that Unno does not anticipate claim 46 and request withdrawal of the rejection under 35 U.S.C. § 102(e) .

The Examiner rejected claims 51, 52, 62, 79, 88, and 89 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,313,333 (“O’Brien”). Without conceding the Examiner’s arguments with respect to this rejection, applicants have canceled these claims. Accordingly, applicants request withdrawal of these rejections.

The Examiner rejected claims 49, 50, 61, 80, and 90 under 35 U.S.C. § 103(a) as being unpatentable over Unno in view of O’Brien.

But neither Unno, nor O’Brien, either alone or in combination, disclose or suggest a passive thermally conducting element including an “assembly of portions of different materials [] configured to conduct heat away from [an] optical element to effect an at least partial compensation of [an] asymmetry of temperature distribution in the optical element,” as required by claims 49, 50, 61, 80, and 90.

The Examiner likens the temperature adjusting devices disclosed by Unno to a passive thermally conducting element. However, while applicants do not concede this is appropriate, Unno does not disclose an assembly configured to conduct heat away from an optical element in

a manner required by the claims. Rather, Unno discloses his temperature adjusting devices as either directing heat and/or cool gas to an optical element (*id.*, col. 8, lines 29-42 and col. 9, lines 40-60).

O'Brien does not cure Unno's deficiencies because, like Unno, O'Brien does not disclose an "assembly ... configured to conduct heat away from [an] optical element to effect an at least partial compensation of [an] asymmetry of temperature distribution in the optical element." Rather, O'Brien discloses an optical assembly for mounting a lens close to a laser diode, for example, where the assembly includes materials having differing co-efficients of thermal expansion arranged so that when the assembly and lens are heated during operation of the laser, expansion of the assembly compensates for a shift in the focal length of the lens due to the temperature change while maintaining alignment of the lens relative to the laser (*O'Brien*, col. 1, line 65 – col. 2, line 18). O'Brien does not disclose an assembly configured so that during operation it conducts heat away from an optical element, much less conducts heat away from an optical element in a way that effects an at least partial compensation of an asymmetry of temperature distribution in the optical element as required by the claims.

Accordingly, neither Unno, nor O'Brien, either alone or in combination disclose or suggest an assembly including different materials configured to conduct heat away from an optical element to effect an at least partial compensation of an asymmetry of temperature distribution in the optical element. Nor, upon reading O'Brien, would a person having ordinary skill have been motivated to modify the apparatus disclosed by Unno based on O'Brien because the apparatus and objectives of O'Brien are not relevant to the apparatus and objectives of Unno. Specifically, O'Brien's "athermalized optical assembly [including] a laser beam source and a collimator lens mounted in an active thermally compensated structure" (*O'Brien*, abstract and col. 2, lines 56-60) is not relevant to mitigating image degradation associated with asymmetric heating of a lens in a projection exposure apparatus, which is the objective of Unno (*Unno*, col. 3, lines 22-53).

For at least these reasons, applicants submit that claims 49, 50, 61, 80, and 90 are not obvious in view of the combination of Unno and O'Brien and applicants ask that the rejection of these claims under 35 U.S.C. § 103(a) be withdrawn.

The Examiner also rejected claims 55, 56, 64, and 84 under 35 U.S.C. § 103(a) as being unpatentable over Unno in view of O'Brien.

However, neither Unno nor O'Brien, either alone or in combination, disclose or suggest passive thermally conducting devices "arranged to conduct heat asymmetrically from [an] optical element" as required by these claims.

As discussed above, Unno discloses temperature adjusting devices as arranged to either direct heat and/or cool gas to an optical element (*id.*, col. 8, lines 29-42 and col. 9, lines 40-60), not to conduct heat from the optical element. Nor does the optical assembly disclosed by O'Brien include thermally conducting devices arranged to conduct heat asymmetrically from an optical element. Nor, upon reading O'Brien, would a person having ordinary skill in the art have been motivated to modify the projection exposure apparatus disclosed by Unno to include the passive thermally conducting devices required by the claims because, as explained above, the apparatus and objectives of O'Brien are not relevant to the apparatus and objectives of Unno.

For at least these reasons, applicants submit that claims 55, 56, 64, and 84 are not obvious in view of the combination of Unno and O'Brien and applicants ask that the rejection of these claims under 35 U.S.C. § 103(a) be withdrawn.

Applicants submit that all claims are in condition for allowance, which action is requested. Please apply any other charges or credits to deposit account 06-1050.

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Page : 14 of 14

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Respectfully submitted,

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